DETAILED ACTION

1. Applicant's amendment filed 7/20/04 and Applicant's responses filed 6/13/12 and 9/4/12 are acknowledged and have been entered.

2. Applicant's election of Group I with traverse in Applicant's response filed 6/13/12 and species of treating a motor neuron disease with antiserum to HIV lysate, wherein the composition is obtained from the serum of a goat after challenge with human cell line membrane antigens and wherein the composition does not comprise anti-HIV neutralizing antibody (with traverse) in Applicant's response filed 9/14/12 is acknowledged.

Because Applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP 818.03(a)).

Claims 20, 21, 23-25 and 28-31 read upon the elected species.

Accordingly, claims 22, 26 and 27 (non-elected species of Group I) and claims 32-34 (non-elected groups II-V) are withdrawn from further consideration by the Examiner, 37 CFR 1.142(b), as being drawn to non-elected inventions.

Claims 20, 21, 23-25 and 28-31 are currently being examined as they read upon the elected species and upon the species of goat-anti-HLA-DR antibodies noted in the 103(a) rejection of record below in this Office Action.

3. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

(i) Non-initialed and/or non-dated alterations have been made to the oath or declaration. See 37 CFR 1.52(c), and
(ii) the declaration does not identify the instant application, but instead refers to application serial no. 60/561,699.

4. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which Applicant may become aware in the specification.

5. The abstract of the disclosure is objected to because it does not describe the claimed invention. Correction is required. See MPEP § 608.01(b).

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

7. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 20, 21, 23-25 and 28-31 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification does not disclose how to use the instant invention, a method of treatment for motor neuron disease (*i.e.,* MND or ALS) comprising administering a serum composition obtainable from a goat to a patient in need of such treatment, wherein the composition is obtained from the serum of a goat after challenge with HIV lysate.

The specification has not enabled the breadth of the claimed invention because the claims encompass treating motor neuron disease with a goat serum composition, wherein the components of the said composition are not standard, the active ingredients are not known and data related to the assertion of therapeutic efficacy are absent.

The state of the art is such that it is unpredictable in the absence of appropriate evidence whether the claimed method can be used for treatment of MND/ALS. The specification discloses that a killed virus is injected into a goat, and blood is drawn and modified for human use (page 7 at the last three paragraphs), but does not disclose that the killed viral cells are a lysate. In addition, the specification discloses that the serum extract comprises the total population of antibody molecules, including anti-HLA activity derived from HIV challenge to a goat.

The specification further discloses that in order to generate serum, they prefer to employ a cocktail of different HIV viruses produced primarily in PBMCs, and that cellular proteins are usually part of the active immunogen, such as, but not limited to FAS, IP10, NGF-75, and also discloses that different cell lines and types may alternatively be used (last four paragraphs on page 12). The specification speculates that "The combination of anti-FAS and/or anti-HLA antibodies may be important, along with antibody against one or more of dopamine receptor, serotonin receptor, nerve growth factor receptor p75 or chemokine CXCL10 and thus assays might be directed at various antibody activities to ensure their presence in the product." (See last paragraph on page 17).

The specification discloses that improved mobility and co-ordination result from administration of (presumably) lysate of HIV plus or minus lysate of undisclosed human cells to ALS patients (See item "4" on page 27.)

The specification does not disclose precisely what preparation was administered, nor does it present data related to the assertion of therapeutic efficacy.

Evidentiary reference De Santis *et al* (J. Inf. Dis. 1993, 168: 1396-1403, IDS reference) teach that HIV envelope glycoprotein mimics human HLA antigens (especially column 2 on page 1396).

Evidentiary reference Martin *et al* (Int. J. Molec. Med. 2000, 5(1): 3-13, abstract) teach that "Because the mechanisms for the motor neuron degeneration in ALS are not understood, this disease has no precisely known causes and no effective treatments."

In the absence of guidance in what preparation is required to produce a therapeutic effect to treat MND, and in view of the lack of guidance in what is the active ingredient or ingredients, it is unpredictable that MND may be treated by administration of an HIV lysate.

Absent a reduction to practice there is no sound scientific reasoning behind this invention. It flies in the face of scientific reality.

There is insufficient guidance in the specification as to how to make and/or use instant invention. Undue experimentation would be required of one skilled in the art to practice the instant invention. See In re Wands 8 USPQ2d 1400 (CAFC 1988).

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 20, 21, 23-25 and 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

(a) Claim 20 is indefinite in the recitation of "serum composition" because it is not clear what is meant, *i.e.*, what the components of the composition are.

(b) Claim 24 is indefinite in the recitation of "HIV lysate" because it is not clear what is meant, *i.e.*, if the HIV lysate is HIV virus cells alone or if the HIV lysate is a lysate of cells infected with HIV viruses.

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 20, 21, 23, 25 and 28-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 00/74718 A1 (IDS reference) in view of WO 01/60156 A1 (IDS reference).

WO 00/74718 A1 teaches treatment of ALS (*i.e.,* motor neuron disease) by administration (injection) of anti-HLA-DR antibodies (see for example, page 3 at section 1, page 16 at lines 19-21 and claim 12).

WO 00/74718 A1 does not teach that the anti-HLA-DR antibodies are goat antibodies.

WO 01/60156 A1 teaches use of heterologous goat antiserum against HIV viral lysate for treatment of humans because of similarities between the goat immune system and the human immune system will not result in severe immune complex reactions customarily anticipated with other foreign animal proteins(see pages 3-4).

It would have been prima facie obvious to have made goat anti-HLA-DR antibodies, including by immunizing with human cell line membrane antigens of which HLA-DR are represented, and to have administered them in the method of the primary reference to treat ALS.

One of ordinary skill in the art at the time the invention was made would have been motivated to do this in order to treat humans with ALS, particularly in light of the teaching of the secondary reference that administration of goat antiserum will not result in severe immune complex reactions customarily anticipated with other foreign animal proteins.

With regard to the administration intervals recited in instant claims 29 and 30, these intervals are standard optimization, and as such it would have been obvious to have administered the antibodies at these recited intervals.

13. No claim is allowed.

14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Marianne DiBrino whose telephone number is 571-272-0842. The Examiner can normally be reached on Monday, Tuesday, Thursday and Friday.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Daniel E. Kolker, Ph.D., can be reached on 571-272-3181. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Marianne DiBrino, Ph.D.
Patent Examiner
Group 1640
Technology Center 1600

/G. R. Ewoldt/
Primary Examiner, Art Unit 1644